FIBERS SITE GROUP

April 10, 2017

Via Email Electronic Copy

Adalberto Bosque, PhD, MBA, REM, CEA
Response and Remediation Branch
U.S Environmental Protection Agency
City View Plaza II - Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, PR 00968-8069

Subject: RD/RA Monthly Report – March 2017
Fibers Public Supply Wells Site
Guayama, Puerto Rico

Dear Mr. Bosque:

On behalf of the Fibers Public Supply Wells Site Settling Defendants, we are submitting the attached RD/RA Monthly Report prepared pursuant to the Consent Decree (Civil Action No. 92-2486) in the matter of *Unites States v. Anaquest Caribe, Inc. et al*, Section IX, Paragraph 30, Reporting Requirements.

Please feel free to contact Mr. James Kirschner of ARCADIS at (602) 797-4519 or me at (724) 544-4874 if you have any questions or comments regarding this submittal.

Sincerely,

Joe Biss, CHMM
Fibers Site Group Project Coordinator
EHS Support LLC

Copies:

Chief, New York/Caribbean Superfund Branch, Attn. Mel Hauptman- via email only
Ms. Margo Ludmer, Assistant Regional Counsel – via email only
Chief, Environmental Enforcement Division, U.S. Department of Justice (DOJ #90-11-2-768)
Amarilis Rodriguez Mendez, State Remedial Project Manager, Puerto Rico Environmental Quality Board - via email only
Ms. Katherine Mishkin, Hydrogeologist, USEPA Superfund Technical Support Section – via email only
Ms. Enid Diaz, Departmento de Recursos Naturales y Ambientales
Mr. Jorge Morales, PRIDCO - via email only
Mr. Joel Melendez Rodriguez, PRIDCO - via email only
Ms. Ana Palou Balsa, PRIDCO – via email only
Mr. Dan Vineyard, Jackson Walker- via email only
James Kirschner, Arcadis - via email only

RD/RA Monthly Report – March 2017
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

(a) Description of actions which have been taken toward achieving compliance with this Decree.

Fibers Air Stripping System

The Fibers groundwater extraction and treatment system (GWETS) was operational for approximately 97% of the time during March 2017. The GWETS had one automated shut down due to a power outage and five shut downs due to GWETS maintenance, and was restarted, in each instance, the same business day.

A summary of the daily treatment system operating records is presented in Table 1. The GWETS average flow rates are depicted on Figure 1. The GWETS operated at an average flow rate of 329 gallons per minute (gpm) and treated approximately 14.67 million gallons of water in March 2017. To date (since May 1999), approximately 3.08 billion gallons of water have been treated at the Fibers Site. The total volume of water treated to date has been revised to correlate with the treatment system influent flow meter totalizer reading. Previous Fibers RD/RA monthly reports used the treatment system effluent flow meter reading to sum the total flow to date. However, the effluent flow meter appears to have inaccuracies due to the larger 10-inch diameter pipe and not being full at these flow rates.

(b) Summary of all sampling results and tests, and all other data received or generated by Settling Defendants.

Groundwater influent and effluent samples were collected on March 9, 2017 and analyzed by Pace Analytical Services, Inc. (Pace) in St. Rose, Louisiana. A summary of the March 9, 2017 GWETS Laboratory Analytical Results is provided in Table 2. A summary of influent groundwater concentrations of tetrachloroethene (PCE) and total haloethers from the GWETS is depicted on Figures 2 and 3, respectively.

Arcadis U.S., Inc. (Arcadis) performed a data quality assessment (validation) of the laboratory analytical results reported by Pace. Results are summarized in the Data Review Report #27404R and provided as Attachment 1. A copy of the chain of custody and annotated sample analysis data sheets are provided as an attachment to the Data Review Report. A copy of the complete Laboratory Analytical Report #2051543 is provided as Attachment 2. A copy of the GWETS Sampling and Monitoring Field Form, documenting sample collection information, individual flow rates at the three groundwater extraction wells and treatment system parameters is provided as Attachment 3.

As noted in the email on February 27, 2017 to A.Bosque, the Fibers Site Group has begun efforts to investigate the acetone detections in both the groundwater monitoring wells and the influent/effluent samples (including trip blanks) associated with the air stripper.

- Arcadis collected a split influent and effluent sample on March 9, 2017. The samples were submitted to Environmental Quality Laboratories, Inc. in Bayamon, Puerto Rico for volatile organic compound analyses. Once the laboratory data packages are validated, a summary of results will be submitted to the United States Environmental Protection Agency (USEPA).
- Arcadis also collected air samples on March 9, 2017 inside the treatment system control room and near the air stripper unit. The samples were submitted to Eurofins Air Toxics, Inc. in Folsom, California for TO-15 analyses. Once the laboratory data packages are validated, a summary of results will be submitted to the USEPA.

Preparation for and attendance at a Site visit requested by USEPA (represented by M.Hauptman and A.Bosque) in Guayama, PR on March 23, 2017. Topics discussed included the Phase 1 and Phase 2 of the subsurface soil investigation being performed on the Wyeth LLC leased portion of the Site along with tour of Wyeth's existing stormwater management basins. Additionally, representatives of the Fibers Site Group participated in a conference call (immediately following the March 23rd Site tour) with T.Lieber and M.Ludmer (both with USEPA in NY) to discuss the disposition of the treated water from the GWETS.

(c) List of all work plans, plans and other deliverables completed and submitted.

None for this reporting period.

(d) Description of all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next six weeks.

The second semi-annual groundwater monitoring and sampling report of 2016 is anticipated to be submitted to the USEPA in the next six weeks.

The first semi-annual groundwater monitoring and sampling event of 2017 is expected to start in May 2017.

Environmental Resource Technologies (ERTEC) is planning to commence a soil vapor extraction pilot study at the Baxter-Guayama facility on the Fibers Site in May 2017.

Once the laboratory data packages are validated, a summary of results from the second phase of a subsurface soil investigation on the Wyeth LLC leased portion of the Site will be submitted to the USEPA.

(e) Information regarding the percentage completion, unresolved delays encountered or anticipated.

Supplemental Subsurface Soil Investigations – In progress
Construction Activities – 100% complete.
System Start-Up – 100% complete.
Start-Up Performance Monitoring – 100% complete.
Long-Term Operation & Maintenance Period – In progress.

(f) List of any modification to work plans or other schedules the Settling Defendants have proposed.

None.

(g) Description of activities undertaken in support of the Community Relations Plan.

No support activities have been requested for the next planning period.

(h) Actions undertaken to address outside parties concerns.

No concerns from outside parties were encountered during this reporting period.

Tables

Table 1
Summary of Daily Treatment System Operating Records - March 2017
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

Recording Date	Influent Flow (gpm) [1]	Effluent Flow (gpm) [2]	RW-2 (gpm) [3]	RW-4 (gpm) [4]	RW-5 (gpm) [5]	pH [6]	Comments
3/1/2017	351	403	115	160	80	NR	
3/2/2017	351	404	115	160	80	NR	
3/3/2017	351	403	115	160	80	NR	
3/4/2017	351	403	115	160	80	NR	
3/5/2017	351	404	115	160	80	NR	
3/6/2017	282	302	92	127	64	NR	Power outage.
3/7/2017	337	388	110	154	77	NR	GWETS maintenance.
3/8/2017	351	403	115	160	80	NR	
3/9/2017	350	403	115	160	80	NR	
3/10/2017	350	403	115	160	80	NR	
3/11/2017	348	396	115	160	80	NR	
3/12/2017	335	392	101	160	80	NR	
3/13/2017	345	402	110	160	80	NR	
3/14/2017	320	364	106	147	73	NR	GWETS maintenance.
3/15/2017	228	260	73	108	53	8.6	GWETS maintenance.
3/16/2017	349	397	115	160	80	8.6	
3/17/2017	339	394	106	160	79	8.6	
3/18/2017	340	396	106	160	79	8.6	
3/19/2017	330	385	96	160	79	8.6	
3/20/2017	257	297	82	121	60	8.6	GWETS maintenance.
3/21/2017	330	387	96	160	80	8.5	
3/22/2017	333	385	106	160	72	8.5	
3/23/2017	316	380	96	160	65	8.5	
3/24/2017	338	378	106	160	78	8.5	
3/25/2017	328	380	104	160	68	8.5	
3/26/2017	336	359	106	160	75	8.5	
3/27/2017	312	373	82	160	74	8.5	GWETS maintenance.
3/28/2017	316	391	96	160	64	8.5	
3/29/2017	324	381	101	160	68	8.5	
3/30/2017	316	345	93	160	68	8.5	
3/31/2017	332	393	102	160	74	8.5	
Monthly Average	329	379	104	155	75	8.5	

Notes:

Flow rates are 24-hour daily average.

gpm = gallons per minute.

[1] = Recorded from instrument FIT-101.

[2] = Recorded from instrument FIT-301.

[3] = Recorded from instrument RW2 FIT.

[4] = Recorded from instrument RW4 FIT.

[5] = Recorded from instrument RW5 FIT.

[6] = Recorded from instrument pHIT-201A.

NR = no reading. On February 21, 2017, the air stripper sump was down for maintenance and the pH probe was damaged beyond repair. Therefore, no system pH readings were recorded from March 1-14 as indicated on Table 1. A new pH probe was installed on March 14, 2017.

Table 2
Summary of Treatment System Laboratory Analytical Results
March 2017
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

Fibers Groundwater Extraction and Treatment System

Laboratory analytical results for water samples collected at the influent and effluent sample tap locations from the Fibers Groundwater Extraction and Treatment System on March 9, 2017 are presented below. The system average influent flow rate at the time the samples were collected was 350 gallons per minute (gpm). Sample results indicate that the treatment system is operating in compliance with operating parameters pursuant to the Consent Decree.

	VOC (µg/L)			
	Sample ID			
Compound	EFF-20170309	EFFDUP-20170309	INF-20170309	TB-20170309
Tetrachloroethene	ND	ND	7.0	ND
Trichloroethene	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	1.0	ND
cis-1,2-dichloroethene	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND
Enflurane	ND	ND	1.8	ND
Haloether 229	ND	ND	33.5	ND
Haloether 406	ND	ND	ND	ND
Haloether 508	ND	ND	50.3	ND
Haloether 528	ND	ND	ND	ND
Halomar	ND	ND	1.2	ND
Isoflurane	ND	ND	92.7	ND
Total Haloethers	ND	ND	180	ND
Acetone	ND	ND	ND	ND
Other VOC	ND	ND	ND	ND

Notes:
VOC = volatile organic compounds.
µg/L = micrograms per liter.
EFF = effluent sample.
EFFDUP = effluent duplicate sample.
INF = influent sample.
TB = trip blank.
ND = not detected at or above laboratory reporting limit.

Figures

Figure 1
Fibers Public Supply Wells Superfund Site
Summary of Treatment System Flow Rates

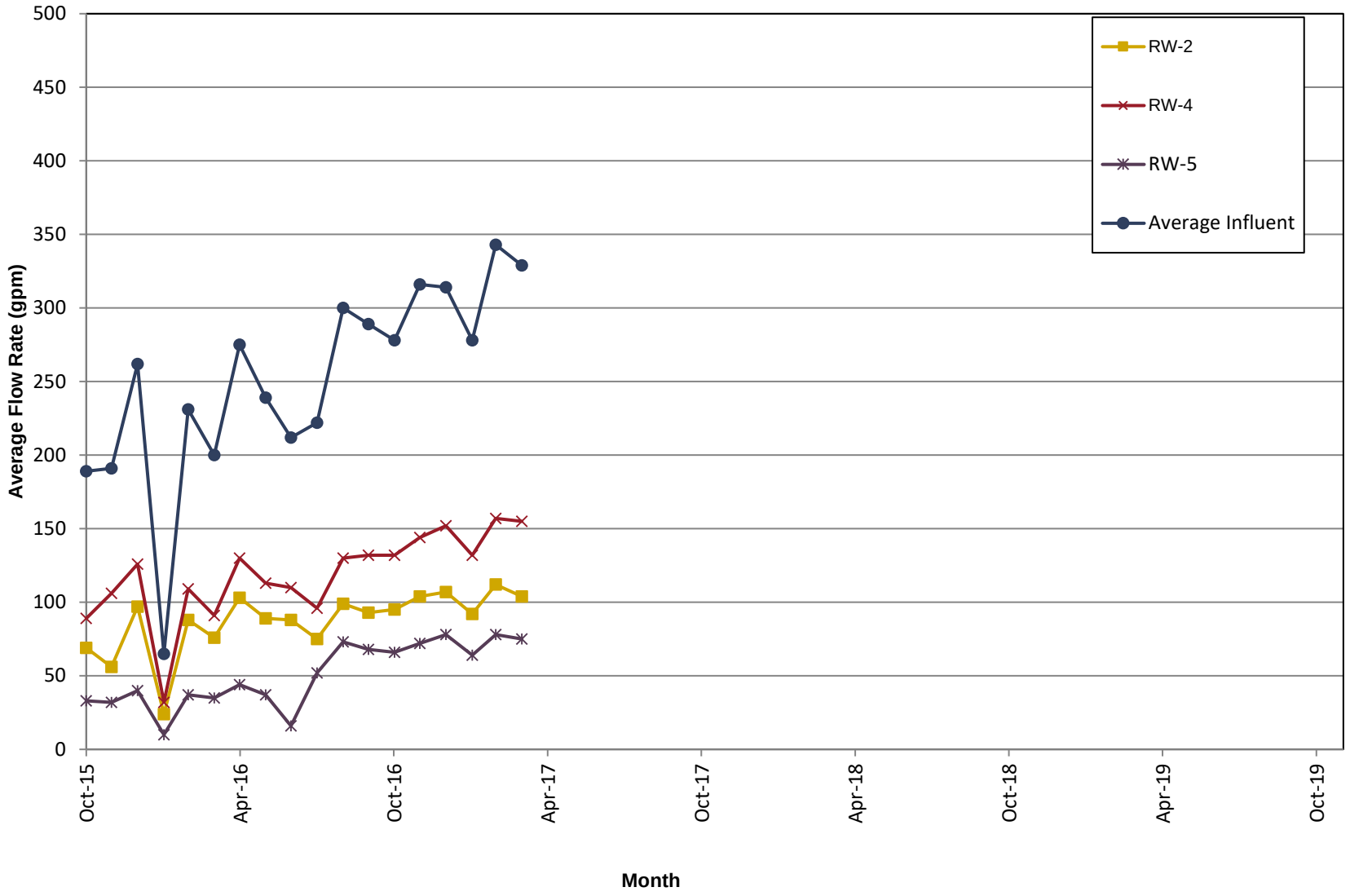


Figure 2
Fibers Public Supply Wells Superfund Site
Treatment System Influent -
Tetrachloroethene (PCE) Concentrations

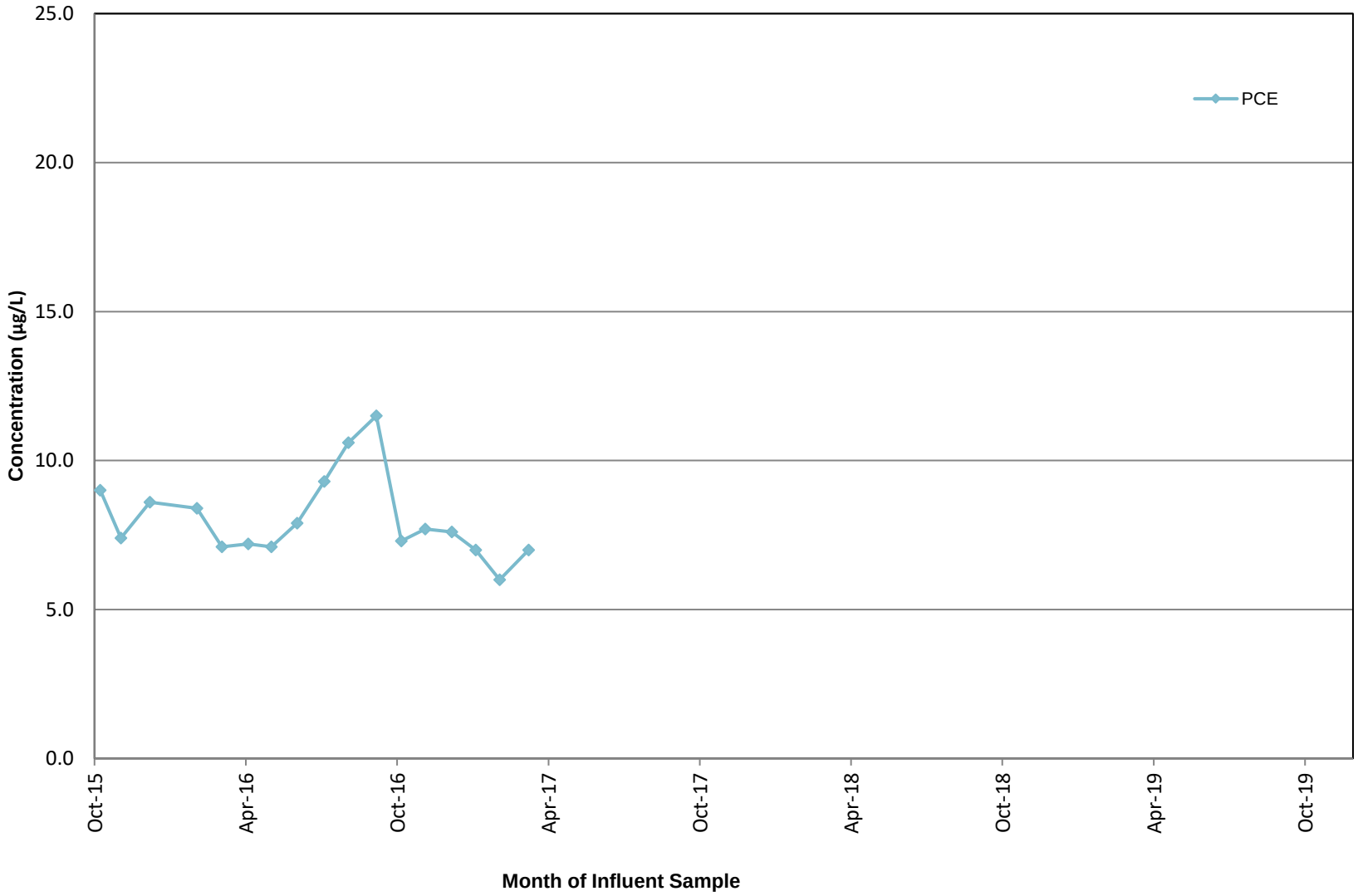
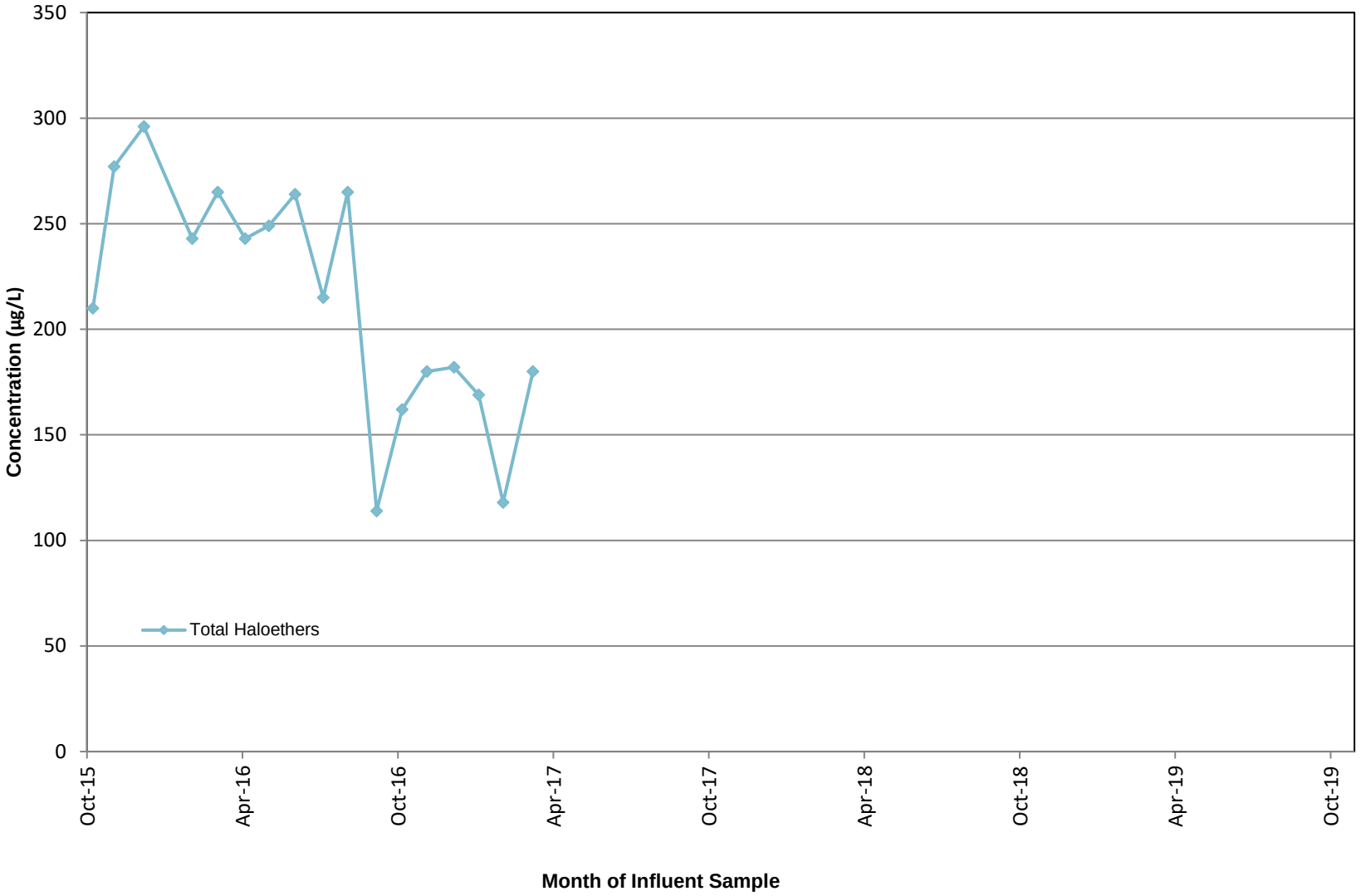


Figure 3
Fibers Public Supply Wells Superfund Site
Treatment System Influent -
Total Haloethers Concentrations



Attachment 1
Data Review Report #27404R

Fibers Group

Data Review

GUAYAMA, PUERTO RICO

Volatiles Analyses

SDG #2051543
Analyses Performed By:
Pace Analytical Services, Inc.
New Orleans, Louisiana

Report: #27404R
Review Level: Tier II
Project: CO001911.0005.1705A

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #2051543 for samples collected in association with the Fibers Group Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	TPH	MET	MISC
TB-20170309	2051543001	Water	03/09/2017		X				
INF-20170309	2051543002	Water	03/09/2017		X				
EFF-20170309	2051543003	Water	03/09/2017		X				
EFFDUP-20170309	2051543004	Water	03/09/2017	EFF-20170309	X				

Note:

1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location EFF-20170309.

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

s.u. Standard units

All samples were analyzed within acceptable holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the RL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
EFF-20170309	Bromomethane	>UL	>UL
	Haloether 229		
	Enflurane	>UL	AC
	Haloether 421		
	Halomar		
	Carbon disulfide		
	Styrene	<10%	<10%
	m&p-Xylene	< LL but > 10%	<10%
	o-Xylene	< LL but > 10%	< LL but > 10%

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
EFF-20170309	1,1-Dichloroethene
	Acrolein
	Carbon disulfide
	Chloroethane
	m&p-Xylene
	o-Xylene
	Vinyl chloride

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
EFF-20170309 / EFFDUP-20170309	All compounds	U	U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Note: The laboratory qualified all Acetone results with a C9 qualifier to indicate that this compound is a "Common Laboratory Contaminant". This qualifier was removed for reporting purposes.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision RPD		X	X		
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X

%R Percent recovery
RPD Relative percent difference
%RSD Relative standard deviation
%D Percent difference

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE: 

DATE: March 27, 2017

PEER REVIEW: Dennis Capria

DATE: April 3, 2017

CHAIN OF CUSTODY/
ANNOTATED SAMPLE ANALYSIS DATA SHEETS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: TB-20170309 **Lab ID: 2051543001** Collected: 03/09/17 00:00 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 14:22	67-64-1	~~C9~~
Acrolein	ND	ug/L	8.0	1		03/15/17 14:22	107-02-8	
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 14:22	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 14:22	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 14:22	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 14:22	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 14:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 14:22	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 14:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 14:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 14:22	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 14:22	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/15/17 14:22	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/15/17 14:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 14:22	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 14:22	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 14:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:22	10061-02-6	
Enflurane	ND	ug/L	1.0	1		03/15/17 14:22	13838-16-9	
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 14:22	100-41-4	
Haloether 229	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 406	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 421	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 427	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 428	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 508	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 528	ND	ug/L	1.0	1		03/15/17 14:22		
Halomar	ND	ug/L	1.0	1		03/15/17 14:22		
2-Hexanone	ND	ug/L	2.0	1		03/15/17 14:22	591-78-6	
Isoflurane	ND	ug/L	1.0	1		03/15/17 14:22		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 14:22	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 14:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 14:22	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 14:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 14:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/15/17 14:22	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 14:22	108-88-3	
Total Haloether	ND	ug/L	1.0	1		03/15/17 14:22		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	79-01-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: TB-20170309 **Lab ID: 2051543001** Collected: 03/09/17 00:00 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		03/15/17 14:22	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 14:22	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 14:22	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 14:22	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 14:22	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		03/15/17 14:22	95-47-6	
Surrogates								
Toluene-d8 (S)	97	%.	79-119	1		03/15/17 14:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	68-124	1		03/15/17 14:22	460-00-4	
Dibromofluoromethane (S)	107	%.	72-126	1		03/15/17 14:22	1868-53-7	

Sample: INF-20170309 **Lab ID: 2051543002** Collected: 03/09/17 08:46 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 14:04	67-64-1	~~C9~~
Acrolein	ND	ug/L	8.0	1		03/15/17 14:04	107-02-8	
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 14:04	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 14:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 14:04	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 14:04	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 14:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 14:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 14:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 14:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 14:04	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 14:04	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/15/17 14:04	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/15/17 14:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 14:04	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 14:04	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 14:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:04	10061-02-6	
Enflurane	**1.8**	ug/L	1.0	1		03/15/17 14:04	13838-16-9	
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 14:04	100-41-4	
Haloether 229	**33.5**	ug/L	1.0	1		03/15/17 14:04		
Haloether 406	ND	ug/L	1.0	1		03/15/17 14:04		
Haloether 421	ND	ug/L	1.0	1		03/15/17 14:04		
Haloether 427	ND	ug/L	1.0	1		03/15/17 14:04		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: INF-20170309 **Lab ID: 2051543002** Collected: 03/09/17 08:46 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Haloether 428	ND	ug/L	1.0	1		03/15/17 14:04		
Haloether 508	**50.3**	ug/L	1.0	1		03/15/17 14:04		
Haloether 528	ND	ug/L	1.0	1		03/15/17 14:04		
Halomar	**1.2**	ug/L	1.0	1		03/15/17 14:04		
2-Hexanone	ND	ug/L	2.0	1		03/15/17 14:04	591-78-6	
Isoflurane	**92.7**	ug/L	1.0	1		03/15/17 14:04		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 14:04	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 14:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 14:04	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 14:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 14:04	79-34-5	
Tetrachloroethene	**7.0**	ug/L	1.0	1		03/15/17 14:04	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 14:04	108-88-3	
Total Haloether	**180**	ug/L	1.0	1		03/15/17 14:04		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	79-01-6	
Trichlorofluoromethane	**1.0**	ug/L	1.0	1		03/15/17 14:04	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 14:04	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 14:04	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 14:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 14:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		03/15/17 14:04	95-47-6	
Surrogates								
Toluene-d8 (S)	97	%.	79-119	1		03/15/17 14:04	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	68-124	1		03/15/17 14:04	460-00-4	
Dibromofluoromethane (S)	108	%.	72-126	1		03/15/17 14:04	1868-53-7	

Sample: EFF-20170309 **Lab ID: 2051543003** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 13:47	67-64-1	~~C9~~
Acrolein	ND	ug/L	8.0	1		03/15/17 13:47	107-02-8	~~R1~~ UJ
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 13:47	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 13:47	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 13:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 13:47	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 13:47	74-83-9	~~M1~~
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 13:47	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 13:47	75-15-0	~~M1,R1~~ UJ
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 13:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 13:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 13:47	75-00-3	~~R1~~ UJ
Chloroform	ND	ug/L	1.0	1		03/15/17 13:47	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: EFF-20170309 **Lab ID: 2051543003** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Chloromethane	ND	ug/L	1.0	1		03/15/17 13:47	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 13:47	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 13:47	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	75-35-4	~~R1~~ UJ
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 13:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 13:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 13:47	10061-02-6	
Enflurane	ND	ug/L	1.0	1		03/15/17 13:47	13838-16-9	~~M1~~
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 13:47	100-41-4	
Haloether 229	ND	ug/L	1.0	1		03/15/17 13:47		~~M1~~
Haloether 406	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 421	ND	ug/L	1.0	1		03/15/17 13:47		~~M1~~
Haloether 427	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 428	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 508	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 528	ND	ug/L	1.0	1		03/15/17 13:47		
Halomar	ND	ug/L	1.0	1		03/15/17 13:47		~~M1~~
2-Hexanone	ND	ug/L	2.0	1		03/15/17 13:47	591-78-6	
Isoflurane	ND	ug/L	1.0	1		03/15/17 13:47		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 13:47	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 13:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 13:47	108-10-1	
Styrene	~~ND~~	~~ug/L~~	~~1.0~~	~~1~~		~~03/15/17 13:47~~	~~100-42-5~~	~~M1~~ R
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 13:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/15/17 13:47	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 13:47	108-88-3	
Total Haloether	ND	ug/L	1.0	1		03/15/17 13:47		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		03/15/17 13:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 13:47	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 13:47	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 13:47	75-01-4	~~R1~~ UJ
m&p-Xylene	~~ND~~	~~ug/L~~	~~2.0~~	~~1~~		~~03/15/17 13:47~~	~~179601-23-1~~	~~M1,R1~~ R
o-Xylene	ND	ug/L	1.0	1		03/15/17 13:47	95-47-6	~~M1,R1~~ UJ
Surrogates								
Toluene-d8 (S)	95	%.	79-119	1		03/15/17 13:47	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	68-124	1		03/15/17 13:47	460-00-4	
Dibromofluoromethane (S)	108	%.	72-126	1		03/15/17 13:47	1868-53-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: EFFDUP-20170309 **Lab ID: 2051543004** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 14:40	67-64-1	~~C9~~
Acrolein	ND	ug/L	8.0	1		03/15/17 14:40	107-02-8	
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 14:40	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 14:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 14:40	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 14:40	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 14:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 14:40	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 14:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 14:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 14:40	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 14:40	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/15/17 14:40	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/15/17 14:40	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 14:40	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 14:40	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 14:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:40	10061-02-6	
Enflurane	ND	ug/L	1.0	1		03/15/17 14:40	13838-16-9	
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 14:40	100-41-4	
Haloether 229	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 406	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 421	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 427	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 428	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 508	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 528	ND	ug/L	1.0	1		03/15/17 14:40		
Halomar	ND	ug/L	1.0	1		03/15/17 14:40		
2-Hexanone	ND	ug/L	2.0	1		03/15/17 14:40	591-78-6	
Isoflurane	ND	ug/L	1.0	1		03/15/17 14:40		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 14:40	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 14:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 14:40	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 14:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 14:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/15/17 14:40	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 14:40	108-88-3	
Total Haloether	ND	ug/L	1.0	1		03/15/17 14:40		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	79-01-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: EFFDUP-20170309 **Lab ID: 2051543004** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		03/15/17 14:40	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 14:40	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 14:40	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 14:40	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 14:40	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		03/15/17 14:40	95-47-6	
Surrogates								
Toluene-d8 (S)	96	%.	79-119	1		03/15/17 14:40	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	68-124	1		03/15/17 14:40	460-00-4	
Dibromofluoromethane (S)	108	%.	72-126	1		03/15/17 14:40	1868-53-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Reques

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fiel

WO# : 2051543

2051543

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ARCADIS	Report To:	David Howard	Attention:	
Address:	410 North 44th St.	Copy To:		Company Name:	
	Phoenix, AZ 85008			Address:	
Email:	david.howard@arcadis-us.com	Purchase Order #:		Pace Quote:	
Phone:	NONE Fax:	Project Name:	Fibers	Pace Project Manager:	justin.stock@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	1037

Regulatory Agency

State / Location: PR

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Analyses Test Y/N	8260- VOCs + Halos	Trip BLANK	Residual Chlorine (Y/N)
1	TB-20170309		WT	—	—	03/09/17	LAB		2				X						X	X	
2	INF-20170309		WT	—	—	03/09/17	0846		3				X						X		
3	EFF-20170309		WT	—	—	03/09/17	0904		3				X						X		
4	EFFDUP-20170309		WT	—	—	03/09/17	0904		3				X						X		
5	EFFMS-20170309		WT	—	—	03/09/17	0904		3				X						X		
6	EFFMSD-20170309		WT	—	—	03/09/17	0904		3				X						X		
7																					
8																					
9																					
10																					
11																					
12																					

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature] ARCADIS	03/09/17	12:29 pm	[signature] Fed Ex	03/09/17	12:29 pm	4C	Y	W	Y
	Fed Ex 3/10/17		0950	[signature]	3/10/17	0950	1.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Elvin Varela

SIGNATURE of SAMPLER: [signature]

DATE Signed: 03/09/17

Attachment 2
Laboratory Analytical Report #2051543

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

March 16, 2017

David Howard
ARCADIS
410 North 44th St.
Suite 1000
Phoenix, AZ 85008

RE: Project: Fibers
Pace Project No.: 2051543

Dear David Howard:
Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Craig McCollum
craig.mccollum@pacelabs.com
504-305-3618
Project Manager

Enclosures

cc: Janisse Diaz, Arcadis
Cassandra McCloud
Gisela Hernandez Rivera, Arcadis
Elvin Varela, ARCADIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

CERTIFICATIONS

Project: Fibers
Pace Project No.: 2051543

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC): T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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St. Rose, LA 70087
(504)469-0333

SAMPLE SUMMARY

Project: Fibers
Pace Project No.: 2051543

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2051543001	**TB-20170309**	Water	03/09/17 00:00	03/10/17 09:50
2051543002	**INF-20170309**	Water	03/09/17 08:46	03/10/17 09:50
2051543003	**EFF-20170309**	Water	03/09/17 09:04	03/10/17 09:50
2051543004	**EFFDUP-20170309**	Water	03/09/17 09:04	03/10/17 09:50

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SAMPLE ANALYTE COUNT

Project: Fibers
Pace Project No.: 2051543

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2051543001	**TB-20170309**	EPA 5030B/8260	RMP	56	PASI-N
2051543002	**INF-20170309**	EPA 5030B/8260	RMP	56	PASI-N
2051543003	**EFF-20170309**	EPA 5030B/8260	RMP	56	PASI-N
2051543004	**EFFDUP-20170309**	EPA 5030B/8260	RMP	56	PASI-N

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PROJECT NARRATIVE

Project: Fibers
Pace Project No.: 2051543

Method: **EPA 5030B/8260**
Description: 8260 MSV HALOETHERS
Client: ARCADIS
Date: March 16, 2017

General Information:
4 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 76487

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2051543003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 322951)
  - Bromomethane
  - Carbon disulfide
  - Enflurane
  - Haloether 229
  - Haloether 421
  - Halomar
  - Styrene
  - m&p-Xylene
  - o-Xylene
- MSD (Lab ID: 322952)
  - Bromomethane
  - Haloether 229

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: Fibers
Pace Project No.: 2051543

Method: **EPA 5030B/8260**
Description: 8260 MSV HALOETHERS
Client: ARCADIS
Date: March 16, 2017

QC Batch: 76487

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2051543003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Styrene
- m&p-Xylene
- o-Xylene

R1: RPD value was outside control limits.

- MSD (Lab ID: 322952)
  - 1,1-Dichloroethene
  - Acrolein
  - Carbon disulfide
  - Chloroethane
  - Vinyl chloride
  - m&p-Xylene
  - o-Xylene

Additional Comments:

Analyte Comments:

QC Batch: 76487

C9: Common Laboratory Contaminant.

- EFF-20170309 (Lab ID: 2051543003)
  - Acetone
- EFFDUP-20170309 (Lab ID: 2051543004)
  - Acetone
- INF-20170309 (Lab ID: 2051543002)
  - Acetone
- TB-20170309 (Lab ID: 2051543001)
  - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: TB-20170309 **Lab ID: 2051543001** Collected: 03/09/17 00:00 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 14:22	67-64-1	C9
Acrolein	ND	ug/L	8.0	1		03/15/17 14:22	107-02-8	
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 14:22	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 14:22	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 14:22	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 14:22	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 14:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 14:22	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 14:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 14:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 14:22	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 14:22	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/15/17 14:22	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/15/17 14:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 14:22	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 14:22	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 14:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:22	10061-02-6	
Enflurane	ND	ug/L	1.0	1		03/15/17 14:22	13838-16-9	
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 14:22	100-41-4	
Haloether 229	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 406	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 421	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 427	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 428	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 508	ND	ug/L	1.0	1		03/15/17 14:22		
Haloether 528	ND	ug/L	1.0	1		03/15/17 14:22		
Halomar	ND	ug/L	1.0	1		03/15/17 14:22		
2-Hexanone	ND	ug/L	2.0	1		03/15/17 14:22	591-78-6	
Isoflurane	ND	ug/L	1.0	1		03/15/17 14:22		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 14:22	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 14:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 14:22	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 14:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 14:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/15/17 14:22	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 14:22	108-88-3	
Total Haloether	ND	ug/L	1.0	1		03/15/17 14:22		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:22	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 14:22	79-01-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: TB-20170309 **Lab ID: 2051543001** Collected: 03/09/17 00:00 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		03/15/17 14:22	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 14:22	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 14:22	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 14:22	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 14:22	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		03/15/17 14:22	95-47-6	
Surrogates								
Toluene-d8 (S)	97	%.	79-119	1		03/15/17 14:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	68-124	1		03/15/17 14:22	460-00-4	
Dibromofluoromethane (S)	107	%.	72-126	1		03/15/17 14:22	1868-53-7	

Sample: INF-20170309 **Lab ID: 2051543002** Collected: 03/09/17 08:46 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 14:04	67-64-1	C9
Acrolein	ND	ug/L	8.0	1		03/15/17 14:04	107-02-8	
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 14:04	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 14:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 14:04	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 14:04	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 14:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 14:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 14:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 14:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 14:04	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 14:04	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/15/17 14:04	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/15/17 14:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 14:04	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 14:04	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 14:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:04	10061-02-6	
Enflurane	**1.8**	ug/L	1.0	1		03/15/17 14:04	13838-16-9	
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 14:04	100-41-4	
Haloether 229	**33.5**	ug/L	1.0	1		03/15/17 14:04		
Haloether 406	ND	ug/L	1.0	1		03/15/17 14:04		
Haloether 421	ND	ug/L	1.0	1		03/15/17 14:04		
Haloether 427	ND	ug/L	1.0	1		03/15/17 14:04		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: INF-20170309 **Lab ID: 2051543002** Collected: 03/09/17 08:46 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Haloether 428	ND	ug/L	1.0	1		03/15/17 14:04		
Haloether 508	**50.3**	ug/L	1.0	1		03/15/17 14:04		
Haloether 528	ND	ug/L	1.0	1		03/15/17 14:04		
Halomar	**1.2**	ug/L	1.0	1		03/15/17 14:04		
2-Hexanone	ND	ug/L	2.0	1		03/15/17 14:04	591-78-6	
Isoflurane	**92.7**	ug/L	1.0	1		03/15/17 14:04		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 14:04	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 14:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 14:04	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 14:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 14:04	79-34-5	
Tetrachloroethene	**7.0**	ug/L	1.0	1		03/15/17 14:04	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 14:04	108-88-3	
Total Haloether	**180**	ug/L	1.0	1		03/15/17 14:04		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:04	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 14:04	79-01-6	
Trichlorofluoromethane	**1.0**	ug/L	1.0	1		03/15/17 14:04	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 14:04	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 14:04	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 14:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 14:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		03/15/17 14:04	95-47-6	
Surrogates								
Toluene-d8 (S)	97	%.	79-119	1		03/15/17 14:04	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	68-124	1		03/15/17 14:04	460-00-4	
Dibromofluoromethane (S)	108	%.	72-126	1		03/15/17 14:04	1868-53-7	

Sample: EFF-20170309 **Lab ID: 2051543003** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 13:47	67-64-1	C9
Acrolein	ND	ug/L	8.0	1		03/15/17 13:47	107-02-8	R1
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 13:47	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 13:47	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 13:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 13:47	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 13:47	74-83-9	M1
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 13:47	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 13:47	75-15-0	M1,R1
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 13:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 13:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 13:47	75-00-3	R1
Chloroform	ND	ug/L	1.0	1		03/15/17 13:47	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: EFF-20170309 **Lab ID: 2051543003** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Chloromethane	ND	ug/L	1.0	1		03/15/17 13:47	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 13:47	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 13:47	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	75-35-4	R1
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 13:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 13:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 13:47	10061-02-6	
Enflurane	ND	ug/L	1.0	1		03/15/17 13:47	13838-16-9	M1
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 13:47	100-41-4	
Haloether 229	ND	ug/L	1.0	1		03/15/17 13:47		M1
Haloether 406	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 421	ND	ug/L	1.0	1		03/15/17 13:47		M1
Haloether 427	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 428	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 508	ND	ug/L	1.0	1		03/15/17 13:47		
Haloether 528	ND	ug/L	1.0	1		03/15/17 13:47		
Halomar	ND	ug/L	1.0	1		03/15/17 13:47		M1
2-Hexanone	ND	ug/L	2.0	1		03/15/17 13:47	591-78-6	
Isoflurane	ND	ug/L	1.0	1		03/15/17 13:47		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 13:47	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 13:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 13:47	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 13:47	100-42-5	M1
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 13:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/15/17 13:47	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 13:47	108-88-3	
Total Haloether	ND	ug/L	1.0	1		03/15/17 13:47		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 13:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 13:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		03/15/17 13:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 13:47	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 13:47	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 13:47	75-01-4	R1
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 13:47	179601-23-1	M1,R1
o-Xylene	ND	ug/L	1.0	1		03/15/17 13:47	95-47-6	M1,R1
Surrogates								
Toluene-d8 (S)	95	%.	79-119	1		03/15/17 13:47	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	68-124	1		03/15/17 13:47	460-00-4	
Dibromofluoromethane (S)	108	%.	72-126	1		03/15/17 13:47	1868-53-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: EFFDUP-20170309 **Lab ID: 2051543004** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		03/15/17 14:40	67-64-1	C9
Acrolein	ND	ug/L	8.0	1		03/15/17 14:40	107-02-8	
Acrylonitrile	ND	ug/L	4.0	1		03/15/17 14:40	107-13-1	
Benzene	ND	ug/L	1.0	1		03/15/17 14:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		03/15/17 14:40	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/15/17 14:40	75-25-2	
Bromomethane	ND	ug/L	1.0	1		03/15/17 14:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		03/15/17 14:40	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		03/15/17 14:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/15/17 14:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/15/17 14:40	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/15/17 14:40	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/15/17 14:40	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/15/17 14:40	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		03/15/17 14:40	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		03/15/17 14:40	74-95-3	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/15/17 14:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/15/17 14:40	10061-02-6	
Enflurane	ND	ug/L	1.0	1		03/15/17 14:40	13838-16-9	
Ethylbenzene	ND	ug/L	1.0	1		03/15/17 14:40	100-41-4	
Haloether 229	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 406	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 421	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 427	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 428	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 508	ND	ug/L	1.0	1		03/15/17 14:40		
Haloether 528	ND	ug/L	1.0	1		03/15/17 14:40		
Halomar	ND	ug/L	1.0	1		03/15/17 14:40		
2-Hexanone	ND	ug/L	2.0	1		03/15/17 14:40	591-78-6	
Isoflurane	ND	ug/L	1.0	1		03/15/17 14:40		
Methoxyflurane	ND	ug/L	1.0	1		03/15/17 14:40	76-38-0	
Methylene Chloride	ND	ug/L	5.0	1		03/15/17 14:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		03/15/17 14:40	108-10-1	
Styrene	ND	ug/L	1.0	1		03/15/17 14:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/15/17 14:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/15/17 14:40	127-18-4	
Toluene	ND	ug/L	1.0	1		03/15/17 14:40	108-88-3	
Total Haloether	ND	ug/L	1.0	1		03/15/17 14:40		
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/15/17 14:40	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/15/17 14:40	79-01-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

ANALYTICAL RESULTS

Project: Fibers
Pace Project No.: 2051543

Sample: EFFDUP-20170309 **Lab ID: 2051543004** Collected: 03/09/17 09:04 Received: 03/10/17 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV HALOETHERS	Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		03/15/17 14:40	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/15/17 14:40	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/15/17 14:40	76-13-1	
Vinyl chloride	ND	ug/L	1.0	1		03/15/17 14:40	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		03/15/17 14:40	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		03/15/17 14:40	95-47-6	
Surrogates								
Toluene-d8 (S)	96	%.	79-119	1		03/15/17 14:40	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	68-124	1		03/15/17 14:40	460-00-4	
Dibromofluoromethane (S)	108	%.	72-126	1		03/15/17 14:40	1868-53-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALITY CONTROL DATA

Project: Fibers
Pace Project No.: 2051543

QC Batch: 76487 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV
Associated Lab Samples: 2051543001, 2051543002, 2051543003, 2051543004

METHOD BLANK: 322949 Matrix: Water
Associated Lab Samples: 2051543001, 2051543002, 2051543003, 2051543004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	03/15/17 12:19	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/15/17 12:19	
1,1,2-Trichloroethane	ug/L	ND	1.0	03/15/17 12:19	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	03/15/17 12:19	
1,1-Dichloroethane	ug/L	ND	1.0	03/15/17 12:19	
1,1-Dichloroethene	ug/L	ND	1.0	03/15/17 12:19	
1,2,3-Trichloropropane	ug/L	ND	1.0	03/15/17 12:19	
1,2-Dichloroethane	ug/L	ND	1.0	03/15/17 12:19	
1,2-Dichloropropane	ug/L	ND	1.0	03/15/17 12:19	
2-Butanone (MEK)	ug/L	ND	2.0	03/15/17 12:19	
2-Hexanone	ug/L	ND	2.0	03/15/17 12:19	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	2.0	03/15/17 12:19	
Acetone	ug/L	ND	4.0	03/15/17 12:19	
Acrolein	ug/L	ND	8.0	03/15/17 12:19	
Acrylonitrile	ug/L	ND	4.0	03/15/17 12:19	
Benzene	ug/L	ND	1.0	03/15/17 12:19	
Bromodichloromethane	ug/L	ND	1.0	03/15/17 12:19	
Bromoform	ug/L	ND	1.0	03/15/17 12:19	
Bromomethane	ug/L	ND	1.0	03/15/17 12:19	
Carbon disulfide	ug/L	ND	1.0	03/15/17 12:19	
Carbon tetrachloride	ug/L	ND	1.0	03/15/17 12:19	
Chlorobenzene	ug/L	ND	1.0	03/15/17 12:19	
Chloroethane	ug/L	ND	1.0	03/15/17 12:19	
Chloroform	ug/L	ND	1.0	03/15/17 12:19	
Chloromethane	ug/L	ND	1.0	03/15/17 12:19	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/15/17 12:19	
cis-1,3-Dichloropropene	ug/L	ND	1.0	03/15/17 12:19	
Dibromochloromethane	ug/L	ND	1.0	03/15/17 12:19	
Dibromomethane	ug/L	ND	1.0	03/15/17 12:19	
Enflurane	ug/L	ND	1.0	03/15/17 12:19	
Ethylbenzene	ug/L	ND	1.0	03/15/17 12:19	
Haloether 229	ug/L	ND	1.0	03/15/17 12:19	
Haloether 406	ug/L	ND	1.0	03/15/17 12:19	
Haloether 421	ug/L	ND	1.0	03/15/17 12:19	
Haloether 427	ug/L	ND	1.0	03/15/17 12:19	
Haloether 428	ug/L	ND	1.0	03/15/17 12:19	
Haloether 508	ug/L	ND	1.0	03/15/17 12:19	
Haloether 528	ug/L	ND	1.0	03/15/17 12:19	
Halomar	ug/L	ND	1.0	03/15/17 12:19	
Isoflurane	ug/L	ND	1.0	03/15/17 12:19	
m&p-Xylene	ug/L	ND	2.0	03/15/17 12:19	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALITY CONTROL DATA

Project: Fibers
Pace Project No.: 2051543

METHOD BLANK: 322949 Matrix: Water
Associated Lab Samples: 2051543001, 2051543002, 2051543003, 2051543004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methoxyflurane	ug/L	ND	1.0	03/15/17 12:19	
Methylene Chloride	ug/L	ND	5.0	03/15/17 12:19	
o-Xylene	ug/L	ND	1.0	03/15/17 12:19	
Styrene	ug/L	ND	1.0	03/15/17 12:19	
Tetrachloroethene	ug/L	ND	1.0	03/15/17 12:19	
Toluene	ug/L	ND	1.0	03/15/17 12:19	
Total Haloether	ug/L	ND	1.0	03/15/17 12:19	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/15/17 12:19	
trans-1,3-Dichloropropene	ug/L	ND	1.0	03/15/17 12:19	
Trichloroethene	ug/L	ND	1.0	03/15/17 12:19	
Trichlorofluoromethane	ug/L	ND	1.0	03/15/17 12:19	
Vinyl chloride	ug/L	ND	1.0	03/15/17 12:19	
4-Bromofluorobenzene (S)	%.	97	68-124	03/15/17 12:19	
Dibromofluoromethane (S)	%.	106	72-126	03/15/17 12:19	
Toluene-d8 (S)	%.	96	79-119	03/15/17 12:19	

LABORATORY CONTROL SAMPLE: 322950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	50.1	100	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.1	102	15-179	
1,1,2-Trichloroethane	ug/L	50	48.9	98	58-144	
1,1,2-Trichlorotrifluoroethane	ug/L	50	50.6	101	38-121	
1,1-Dichloroethane	ug/L	50	52.4	105	63-129	
1,1-Dichloroethene	ug/L	50	47.7	95	51-139	
1,2,3-Trichloropropane	ug/L	50	45.6	91	13-187	
1,2-Dichloroethane	ug/L	50	42.6	85	57-148	
1,2-Dichloropropane	ug/L	50	50.1	100	66-128	
2-Butanone (MEK)	ug/L	50	52.8	106	32-183	
2-Hexanone	ug/L	50	48.0	96	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	51.7	103	26-171	
Acetone	ug/L	50	58.5	117	22-165	
Acrolein	ug/L	100	82.4	82	10-131	
Acrylonitrile	ug/L	50	46.9	94	18-149	
Benzene	ug/L	50	49.8	100	62-131	
Bromodichloromethane	ug/L	50	46.4	93	69-132	
Bromoform	ug/L	50	37.9	76	35-166	
Bromomethane	ug/L	50	77.3	155	34-158	
Carbon disulfide	ug/L	50	59.6	119	31-128	
Carbon tetrachloride	ug/L	50	40.8	82	54-144	
Chlorobenzene	ug/L	50	50.0	100	70-127	
Chloroethane	ug/L	50	70.8	142	17-195	
Chloroform	ug/L	50	51.9	104	73-134	
Chloromethane	ug/L	50	49.1	98	17-153	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALITY CONTROL DATA

Project: Fibers
Pace Project No.: 2051543

LABORATORY CONTROL SAMPLE: 322950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	50	51.5	103	68-129	
cis-1,3-Dichloropropene	ug/L	50	47.2	94	72-138	
Dibromochloromethane	ug/L	50	45.3	91	49-146	
Dibromomethane	ug/L	50	45.3	91	56-145	
Enflurane	ug/L	50	52.4	105	56-135	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Haloether 229	ug/L	50	51.8	104	62-123	
Haloether 406	ug/L	50	52.4	105	62-134	
Haloether 421	ug/L	50	52.9	106	70-128	
Haloether 427	ug/L	50	45.9	92	69-153	
Haloether 428	ug/L	50	47.8	96	70-134	
Haloether 508	ug/L	50	53.1	106	52-139	
Haloether 528	ug/L	50	37.1	74	48-157	
Halomar	ug/L	50	54.0	108	62-128	
Isoflurane	ug/L	50	50.1	100	61-132	
m&p-Xylene	ug/L	100	99.2	99	65-129	
Methoxyflurane	ug/L	50	50.3	101	72-124	
Methylene Chloride	ug/L	50	55.9	112	46-168	
o-Xylene	ug/L	50	49.0	98	65-124	
Styrene	ug/L	50	52.1	104	72-133	
Tetrachloroethene	ug/L	50	48.8	98	46-157	
Toluene	ug/L	50	49.2	98	69-126	
Total Haloether	ug/L		548			
trans-1,2-Dichloroethene	ug/L	50	50.5	101	60-129	
trans-1,3-Dichloropropene	ug/L	50	44.9	90	59-149	
Trichloroethene	ug/L	50	51.7	103	67-132	
Trichlorofluoromethane	ug/L	50	51.0	102	39-171	
Vinyl chloride	ug/L	50	45.2	90	27-149	
4-Bromofluorobenzene (S)	%.			95	68-124	
Dibromofluoromethane (S)	%.			104	72-126	
Toluene-d8 (S)	%.			97	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 322951 322952

Parameter	Units	2051543003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	60.6	52.2	121	104	54-137	15	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	56.5	50.2	113	100	15-187	12	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.3	47.7	107	95	59-148	11	20	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	50	50	55.1	48.0	110	96	40-117	14	20	
1,1-Dichloroethane	ug/L	ND	50	50	60.3	51.6	121	103	59-133	15	20	
1,1-Dichloroethene	ug/L	ND	50	50	54.8	41.8	110	84	44-146	27	20	R1
1,2,3-Trichloropropane	ug/L	ND	50	50	50.5	44.5	101	89	14-199	12	20	
1,2-Dichloroethane	ug/L	ND	50	50	47.5	42.1	95	84	56-154	12	20	
1,2-Dichloropropane	ug/L	ND	50	50	55.8	49.4	112	99	62-135	12	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALITY CONTROL DATA

Project: Fibers
Pace Project No.: 2051543

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 322951 322952

Parameter	Units	2051543003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Butanone (MEK)	ug/L	ND	50	50	59.2	51.9	116	101	20-205	13	20	
2-Hexanone	ug/L	ND	50	50	49.9	46.4	100	93	25-189	7	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	55.8	51.0	112	102	23-184	9	20	
Acetone	ug/L	ND	50	50	58.8	54.8	115	107	11-217	7	20	
Acrolein	ug/L	ND	100	100	26.0	18.9	26	19	10-142	32	20	R1
Acrylonitrile	ug/L	ND	50	50	51.0	46.4	102	93	20-164	9	20	
Benzene	ug/L	ND	50	50	57.8	49.8	116	100	52-141	15	20	
Bromodichloromethane	ug/L	ND	50	50	52.3	46.2	105	92	70-134	12	20	
Bromoform	ug/L	ND	50	50	40.2	36.6	80	73	37-171	9	20	
Bromomethane	ug/L	ND	50	50	93.5	80.9	187	162	34-155	14	20	M1
Carbon disulfide	ug/L	ND	50	50	75.5	53.3	151	106	28-130	34	20	M1,R1
Carbon tetrachloride	ug/L	ND	50	50	49.0	41.6	98	83	48-146	16	20	
Chlorobenzene	ug/L	ND	50	50	56.2	50.0	112	100	67-129	12	20	
Chloroethane	ug/L	ND	50	50	93.9	73.6	188	147	12-192	24	20	R1
Chloroform	ug/L	ND	50	50	61.3	52.3	123	105	66-143	16	20	
Chloromethane	ug/L	ND	50	50	69.8	60.4	140	121	14-155	15	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	60.2	51.1	120	102	56-141	16	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	47.7	41.6	95	83	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	49.8	45.1	100	90	50-150	10	20	
Dibromomethane	ug/L	ND	50	50	50.6	43.9	101	88	58-153	14	20	
Enflurane	ug/L	ND	50	50	63.6	54.1	127	108	63-126	16	20	M1
Ethylbenzene	ug/L	ND	50	50	45.3	39.4	91	79	57-135	14	20	
Haloether 229	ug/L	ND	50	50	71.9	65.8	144	132	56-127	9	20	M1
Haloether 406	ug/L	ND	50	50	64.0	55.1	128	110	68-128	15	20	
Haloether 421	ug/L	ND	50	50	61.1	53.2	122	106	74-120	14	20	M1
Haloether 427	ug/L	ND	50	50	55.6	48.6	111	97	78-120	13	20	
Haloether 428	ug/L	ND	50	50	57.6	50.2	115	100	74-125	14	20	
Haloether 508	ug/L	ND	50	50	65.4	56.0	131	112	28-156	16	20	
Haloether 528	ug/L	ND	50	50	41.8	35.8	84	72	45-142	16	20	
Halomar	ug/L	ND	50	50	64.1	54.3	128	109	67-123	17	20	M1
Isoflurane	ug/L	ND	50	50	60.5	51.9	121	104	45-140	15	20	
m&p-Xylene	ug/L	ND	100	100	12.7	8.9	13	9	56-136	35	20	M1,R1
Methoxyflurane	ug/L	ND	50	50	56.8	49.8	114	100	75-119	13	20	
Methylene Chloride	ug/L	ND	50	50	64.5	56.0	129	112	45-166	14	20	
o-Xylene	ug/L	ND	50	50	16.6	12.6	33	25	57-133	27	20	M1,R1
Styrene	ug/L	ND	50	50	.53J	.43J	1	1	58-144		20	M1
Tetrachloroethene	ug/L	ND	50	50	57.4	50.6	115	101	48-143	13	20	
Toluene	ug/L	ND	50	50	45.3	37.7	91	75	59-136	18	20	
Total Haloether	ug/L	ND			662	575				14		
trans-1,2-Dichloroethene	ug/L	ND	50	50	62.0	52.2	124	104	57-132	17	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	45.5	39.5	91	79	59-154	14	20	
Trichloroethene	ug/L	ND	50	50	60.8	52.6	122	105	58-140	14	20	
Trichlorofluoromethane	ug/L	ND	50	50	67.1	57.6	134	115	24-175	15	20	
Vinyl chloride	ug/L	ND	50	50	29.1	22.0	58	44	21-150	28	20	R1
4-Bromofluorobenzene (S)	%.						96	96	68-124			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALITY CONTROL DATA

Project: Fibers
Pace Project No.: 2051543

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		322951			322952							
Parameter	Units	2051543003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromofluoromethane (S)	%.						106	106	72-126			
Toluene-d8 (S)	%.						96	96	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALIFIERS

Project: Fibers
Pace Project No.: 2051543

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N	Pace Analytical Services - New Orleans

ANALYTE QUALIFIERS

C9	Common Laboratory Contaminant.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
1000 Riverbend Blvd - Suite F
St. Rose, LA 70087
(504)469-0333

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Fibers
Pace Project No.: 2051543

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2051543001	**TB-20170309**	EPA 5030B/8260	76487		
2051543002	**INF-20170309**	EPA 5030B/8260	76487		
2051543003	**EFF-20170309**	EPA 5030B/8260	76487		
2051543004	**EFFDUP-20170309**	EPA 5030B/8260	76487		

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Reques

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fiel

WO# : 2051543

2051543

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ARCADIS	Report To:	David Howard	Attention:	
Address:	410 North 44th St.	Copy To:		Company Name:	
	Phoenix, AZ 85008			Address:	
Email:	david.howard@arcadis-us.com	Purchase Order #:		Pace Quote:	
Phone:	NONE Fax:	Project Name:	Fibers	Pace Project Manager:	justin.stock@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	1037

Regulatory Agency

State / Location: PR

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Analyses Test Y/N	8260- VOCs + Halos	Trip BLANK	Residual Chlorine (Y/N)
1	TB-20170309		WT	—	—	03/09/17	LAB		2				X						X	X	
2	INF-20170309		WT	—	—	03/09/17	0846		3				X						X		
3	EFF-20170309		WT	—	—	03/09/17	0904		3				X						X		
4	EFFDUP-20170309		WT	—	—	03/09/17	0904		3				X						X		
5	EFFMS-20170309		WT	—	—	03/09/17	0904		3				X						X		
6	EFFMSD-20170309		WT	—	—	03/09/17	0904		3				X						X		
7																					
8																					
9																					
10																					
11																					
12																					

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature] ARCADIS	03/09/17	12:29 pm	[signature] Fed Ex	03/09/17	12:29 pm	4C	Y	W	Y
	Fed Ex 3/10/17		0950	[signature]	3/10/17	0950	1.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Elvin Varela

SIGNATURE of SAMPLER: [signature]

DATE Signed: 03/09/17

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon F

WO# : 2051543

PM: CJM **Due Date: 03/24/17**

Proj **CLIENT: 20-CHEV-ARC**

Courier: ☐ Pace Courier ☐ Hired Courier ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals intact:** ☑Yes ☐No

Therometer Used: ☐ Therm Fisher IR 5 ☐ Therm Fisher IR 6 ☑ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3-10-17 JMB

Temp must be measured from Temperature blank when present

				Comments:
Temperature Blank Present"?	☐Yes	☐No	☑N/A	1
Chain of Custody Present:	☑Yes	☐No	☐N/A	2
Chain of Custody Complete:	☑Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	4
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	5
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	6
Sufficient Volume:	☑Yes	☐No	☐N/A	7
Correct Containers Used:	☑Yes	☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☑N/A	9
Sample Labels match COC:	☑Yes	☐No	☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes	☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☐Yes	☐No	☑N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	14
Trip Blank Present:	☑Yes	☐No		15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Attachment 3
Sampling and Monitoring Field Form

ARCADIS Design & Consultancy for natural and built assets

Groundwater Extraction and Treatment System (GWETS) Sampling and Monitoring Field Form
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

Collection Date	Sample ID	Collection Time	Sampler's Initials
03/09/17	INF-20170309	0840	EV
03/09/17	EFF-20170309	0904	EV
03/09/17	EFFDUP-20170309	0904	EV
03/09/17	EFFMS-20170309	0904	EV
03/09/17	EFF MSD-20170309	0904	EV
03/09/17	TB-20170309	LAB	LAB

GWETS Operational Data at Sample Collection

Extraction Wells

RW-2	114.5	gpm
RW-4	159.4	gpm
RW-5	79.2	gpm

Compound Treatment System

Influent Flow Rate (FIT-101)	349.9	gpm
Effluent Flow Rate (FIT-301)	404.8	gpm
Blower (FIT-201A)	2310	scfm
Influent Flow Pressure (PIT-101)	2.7	psi
Effluent Flow Pressure (PIT-301)	23.0	psi
* pH (pHIT-201A)	2.6	

Notes:
gpm = gallons per minute
cfm = cubic feet per minute
psi = pounds per square inch

* pH sensor broken